

What is claimed is:

- 545
A2
5
1. A method of controlling the display of an articulated graphical image in a graphical environment, the method comprising:
sensing manipulation of a user object;
controlling the displayed position or shape of the articulated graphical image in relation to the sensed manipulation; and
when the articulated graphical image interacts with a graphical object, changing the relationship between the displayed position or shape of the articulated graphical image and the sensed manipulation.
2. A method according to claim 1 wherein when the articulated graphical image interacts with a graphical object, the displayed position or shape of the articulated graphical image is calculated by an algorithm.
3. A method according to claim 2 wherein the algorithm uses constraints to calculate the displayed position or shape of the graphical image.
4. A method according to claim 2 wherein the algorithm uses numerical methods to calculate the displayed position or shape of the graphical image.
5. A method according to claim 2 wherein the algorithm comprises a quadratically converging and linearly scalable constraint solver.
6. A method according to claim 1 wherein the user object is articulatable.
7. A method according to claim 1 wherein the user object is capable of providing a haptic sensation to the user.
8. A method according to claim 7 wherein the haptic sensation is related to the interaction of the graphical image and the graphical object.

9. A method of controlling the display of a graphical image in a graphical environment, the method comprising:

sensing manipulation of a user object;

controlling the displayed position or shape of the graphical image in
5 relation to the sensed manipulation; and

when the articulated graphical image interacts with a graphical object,
changing the relationship between the displayed position or shape of the graphical image and
the sensed manipulation by calculating a position or shape of the graphical image using an
algorithm using numerical methods.

10. A method according to claim 9 wherein the algorithm comprises a
quadratically converging and linearly scalable constraint solver.

11. A method according to claim 9 wherein the user object is capable of
15 providing a haptic sensation to the user.

12. A method according to claim 11 wherein the haptic sensation is related to
the interaction of the graphical image and the graphical object.

20

ADD
A2

25